

## **IN THE CLAIMS**

1. (Cancelled).

2. (Previously Presented) A method according to claim 14, comprising implementing the vapor deposition at temperatures between 50°C and 300°C and a pressure between 0.001 Pa and 3 Pa.

Claim 3 has been amended as follows:

3. (Currently Amended) A method according to claim 14 comprising ~~implementing a temperature treatment of~~ cooling the luminophore layer after said vapor deposition and thereafter tempering the luminophore layer ~~the vapor deposition and a cooling.~~

Claim 4 has been amended as follows:

4. (Currently Amended) A method according to claim 3, ~~comprising implementing the temperature treatment after~~ wherein the step of cooling the luminophore layer comprises cooling the luminophore layer at room temperature in the presence of water vapor.

Claim 5 has been amended as follows:

5. (Currently Amended) A method according to claim 3 ~~comprising implementing the temperature treatment~~ wherein the step of tempering the luminophore layer comprises tempering the luminophore layer in a range from 100°C to 300°C.

Claim 6 has been amended as follows:

6. (Currently Amended) A method according to claim 3, comprising ~~implementing the temperature treatment~~ wherein the step of tempering the luminophore layer comprises tempering the luminophore layer in a mixture of inert gas and water vapor.

Claim 7 has been amended as follows:

7. (Currently Amended) A method according to claim 3, comprising ~~implementing the temperature treatment~~ wherein the step of tempering the luminophore layer comprises tempering the luminophore layer in humid air.

Claim 8 has been amended as follows:

8. (Currently amended) A method according to claim 14, comprising using  $\text{Cs}_x\text{Eu}_y\text{Br}_{(x+2y)}$  as said alkali ~~halogenide~~ halide phase and using CsBr as said alkali ~~halogenide~~ halide, to form ~~an x-ray storage luminophore~~  $\text{CsBr} : \text{Cs}_x\text{Eu}_y\text{Br}_{(x+2y)}$  as said luminophore layer.

Claim 9 has been amended as follows:

9. (Currently amended) A method according to claim 14 comprising simultaneously vaporizing a quantity x of the alkali ~~halogenide~~ halide phase and a quantity ~~(600g-x)~~ (600-x) grams of the alkali ~~halogenide~~ halide.

Claim 10 has been amended as follows:

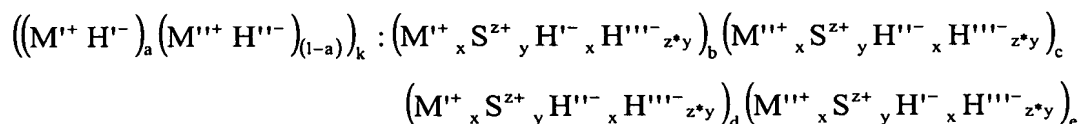
10. (Currently amended) A method according to claim 14, comprising mixing the alkali ~~halogenide~~ halide phase and the alkali ~~halogenide~~ halide and introducing the mixture into a vaporization vessel for vaporization thereof.

Claim 11 has been amended as follows:

11. (Currently Amended) A method according claim 14 comprising separately introducing the alkali halogenide halide phase and the alkali halogenide halide into respective vaporization vessels and simultaneously vaporizing said alkali halogenide halide phase and said alkali halogenide halide in the respective vacuum vessels.

Claim 12 has been amended as follows:

12. (Currently amended) A needle-shaped x-ray luminophore layer with at least one alkali metal, produced according to the method according claim 14 having the formula:



wherein ~~M<sup>+</sup> is at least one~~ M<sup>+</sup> and M<sup>+</sup> are respective metal ion ions selected from the group consisting of Na, K, Rb and Cs, ~~H<sup>-</sup> is at least one halogenide~~ H<sup>+</sup>, H<sup>+</sup> and H<sup>+</sup> are respective halogens selected from the group consisting of F, Cl, Br and I, and S<sup>z+</sup> is at least one lanthanide ion selected from the group consisting of La, Ce, Pr, Nd, Pm, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb or Lu.

Claim 13 has been amended as follows:

13. (Currently Amended) An x-ray luminophore layer according to claim 12, comprising an x-ray storage luminophore layer having the formula:



14. (Currently Amended) A method for producing a luminophore comprising the steps of:

~~in a vaporization phase,~~ simultaneously vaporizing an alkali ~~halogenide~~ halide  
phase ~~with~~ and an alkali ~~halogenide~~ halide and thereby producing  
vaporized material; and

vacuum-depositing said vaporized material on a substrate and thereby  
producing a needle-shaped x-ray luminophore layer having at least one  
alkali metal on said substrate.